REMARKS

Applicant appreciates the Examiner's continued thorough examination of the present application. Applicant also appreciates the Examiner's indication in the final Official Action of March 24, 2004 that the earlier objections to the specification, objections to the claims and rejections under 35 USC §112 have been withdrawn. In order to avoid the need for an appeal, Applicant respectfully requests the Examiner to reconsider one issue that was raised in the final Official Action, and to allow all of the claims in view of the remarks below. For purposes of appeal, Applicant incorporates all of the analysis that was presented in the Amendment of December 19, 2003. This analysis will not be repeated for the sake of brevity.

Specifically, at Page 3, Paragraph 4, the final Official Action states:

> Applicant's arguments filed on 12/22/2003 have been fully considered but they are not persuasive.
>
> Regarding applicant's arguments of 35 U.S.C. 102(3) rejection that: 1) "Cheng et al. uses a system of secondary memory to allow high throughput data to be stored"; 2) "Cheng et al. does not appear to describe or suggest burst of data, deferring building and [sic] index for a plurality of records in a burst of data, or deferring an index until after storing a plurality of data records in the respective burst in the database, as recited in Claim 1, 14 and 23." The examiner disagrees.
>
> In reply to these arguments, the examiner points out that Cheng specifically disclosed a computer system to perform high frequency data insertion to resolve disk I/O bottleneck at a lower cost. [e.g., col. 2, lines 40-45] wherein, the high frequency data insertion is a burst of data storing processing. Furthermore, Cheng discloses his system handles I/O bottleneck high frequency data insertion by deferring index changes, and handles such updates to the stored log indexes in batches in a predefined order that matches the order in which indexes are stored on disk [e.g. col. 2, lines 45-50, the steps 300-302, Fig. 4A]. (Emphasis added.)

Applicant respectfully requests the Examiner to reconsider the Examiner's assertion that Cheng et al. relates to bursts of data. More specifically, bursts of data are defined in, for example, Claim 1:

> 1. A method of storing temporally spaced apart bursts of data records in a database, comprising:
>
> deferring building an index for a plurality of data records in a respective burst until after storing the plurality of data records in the respective burst in the database. (Emphasis added.)

Applicant notes that the passage cited by the Examiner (Cheng et al. Column 2, lines 40-45) relates to "high frequency data insertion". The above-quoted passage equates

"high frequency data insertion" with "temporally spaced apart bursts of data records" as recited in Claim 1. In response, Applicant wishes to point out the following examples from Cheng et al. which provide examples of high frequency data insertion. In particular, Cheng et al. notes at Column 1, line 53-Column 2, line 30:

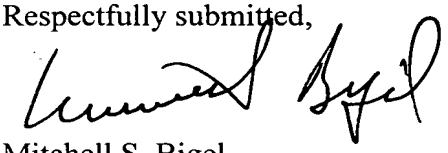
> Consider as an example, a multi-user banking system running one hundred transactions per second. Each transaction updates a column value in a randomly chosen row from one of several different tables. Using a system with three primary tables, two of which are small enough to be maintained in primary memory and one of which is maintained in secondary memory, each transaction will require, on average, two I/O operations, for a total of 200 disk I/O operations per second. If each disk arm of a disk storage device can handle no more than 25 I/O operations per second, then eight disk arms would be required to handle this level of transactional activity.
>
> One can easily envision a use for indexed retrieval of log records by any of a number of keys: Account Identifier concatenated with a Timestamp, to answer questions by account holders about past transactions; Teller Identifier concatenated with a Timestamp, to make it easier to resolve cash drawer imbalances, etc. The duration of interest for such indexes can be quite long.
>
> Now consider the added resources that would be needed to keep an Account-ID-Timestamp index on log records over a period of a month, using a standard B-tree indexed file. For those readers not familiar with B-tree indexes, note that these types of indexes are well known in the prior art, and will be explained in some detail below. For now, the only significance of the use of standard B-tree indexes is that the position of the index of the log record for each successive record is random--meaning that it can be at any position in the file. One hundred new log index entries are generated per second for the Account-ID-Timestamp index, eight hours per day, twenty working days per month. Thus there are about 57,600,000 new entries generated per month. In addition, each index entry will require at least ten bytes, resulting in an index table occupying about half a gigabyte of storage space. Clearly, most of the index table will not be memory resident. Since the position of each new inserted log record is random, it will typically require an average of one page read and one page write in order to insert the log record for each transaction. Thus, each index of this kind adds about 200 disk I/O operations per second, or an additional eight disk arms. (Emphasis added.)

Thus, Cheng et al. is describing high frequency, continuous transactions. In sharp contrast, Claims 1, 14 and 28 relate to "bursty" data, such as was described in connection with Figure 1 of the present application, wherein "large amounts of data are received during a burst of time and no or relatively small amounts of data are received between the bursts of time" (see the present application, Page 2, lines 17-18).

"Bursty" is also defined in the Microsoft Computer Dictionary, 3rd Edition, as "transmitting data in spurts, or bursts, rather than in a continuous stream". In view of the above, it would not be obvious to use deferred index building for high frequency data in a system that uses bursty data.

Accordingly, Applicant respectfully requests reconsideration of the outstanding rejection and allowance of the present application. Alternatively, Applicant respectfully requests entry of the present Request for Reconsideration as narrowing the issues for consideration on appeal.

Respectfully submitted,



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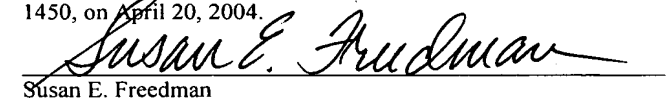

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Date of Signature: April 20, 2004